# SSERC logo

**SSERC Risk Assessment** (revised version March 2018)

(based on HSE’s INDG 163 ‘Risk assessment - A brief guide to controlling risks in the workplace’)

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| Activity assessed | Identifying Carbonyls |
| *Date of assessment* | 3rd December 2020 |
| *Date of review (****Step 5****)* |  |
| *School* |  |
| *Department* |  |

| Step 1 | Step 2 | Step 3 | Step 4 | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *List Significant hazards here:* | *Who might be harmed and how?* | *What are you already doing?*  *What further action is needed?* | *Actions* | | | | |
| *by whom?* | | *Due date* | | *Done* |
| Propanal is toxic by skin absorption and by swallowing. | Technician decanting samples for use or pupils while carrying out tests by splashing. | Wear goggles (EN 166 3) and gloves |  |  | |  | |
| 0.1 mol l-1 potassium dichromate is toxic if swallowed. It is carcinogenic and very toxic by inhalation. It is also a skin sensitiser | Technician preparing dilute solution or pupils while carrying out tests by splashing. | Wear goggles (EN 166 3) and gloves. (avoid raising dust or producing aerosols). |  |  | |  | |
| Sulphuric acid is corrosive to skin and eyes. | Technician preparing dilute solution by splashing | Wear goggles (EN 166 3) or a face shield and gloves. Add acid to water, never the other way around. |  |  | |  | |
| 1 mol l-1 sulphuric acid is a skin/eye irritant | Pupils while carrying out tests by splashing. | Wear eye protection. |  |  | |  | |
| Benedict's solution is harmful if swallowed. | Technician/pupils by ingestion. | Normal good laboratory hygiene should mitigate any hazards. |  |  | |  | |
| Tollens' reagent forms explosive compounds on standing – it is also a skin/eye irritant | Pupils, teacher or technician by explosion  Or pupils/technician/teachers by splashing | Always prepare fresh – not more than an hour before use. Residues must be washed to waste immediately with lots of fresh water. **NEVER store or prepare in advance.**  Wear eye protection. |  |  | |  | |

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| **Description of activity:**  Solutions of X and Y (propanal and propanone) are tested using: a. potassium dichromate, b. Benedict’s reagent and c. Tollen’s reagent.  Reagents are added to the 2 carbonyls and placed in a hot water bath for a few minutes to observe any changes. |
| **Additional comments:**  Tollens reagent forms explosives on standing and should NEVER be prepared in advance. Also, the residue after the experiment should be disposed of immediately by washing to waste with plenty of cold running water. |